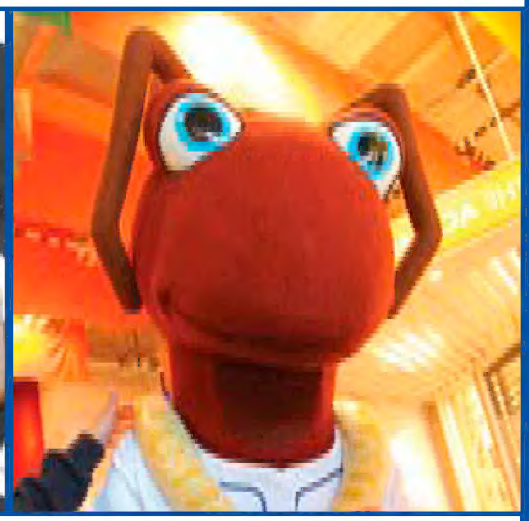
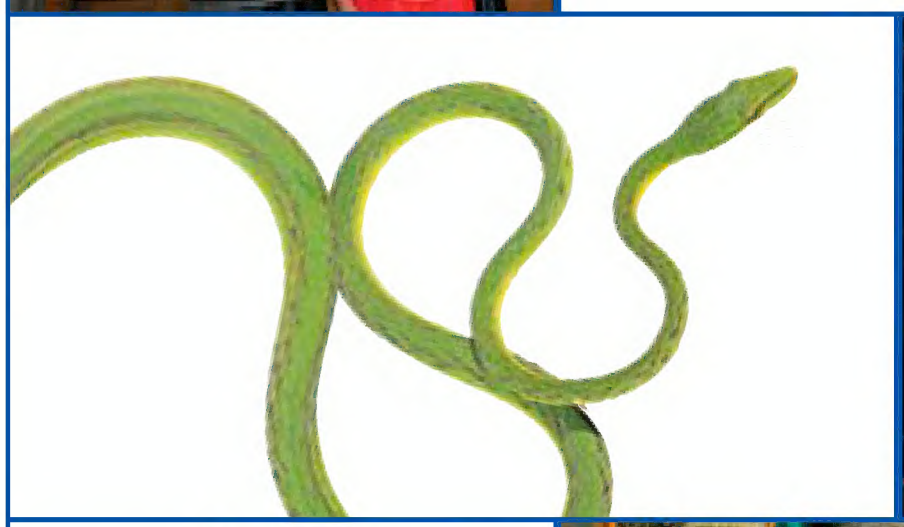
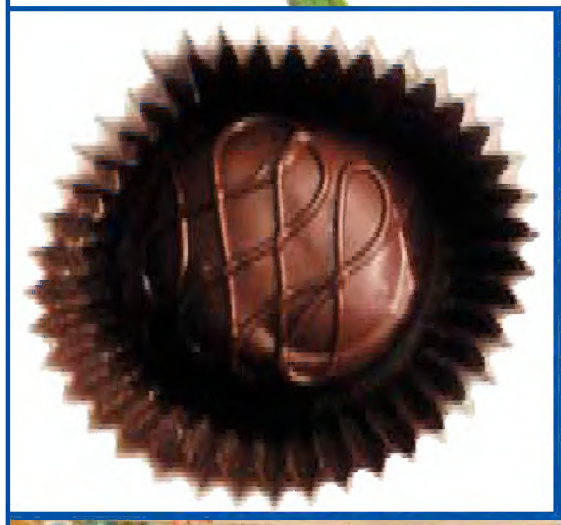
Annual Report
2004–2005







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ACADEMY OF SCIENCES

875 Howard Street, San Francisco, California 94103

STEINHART AQUARIUM • NATURAL HISTORY MUSEUM • RESEARCH • EDUCATION

Making History with the Academy

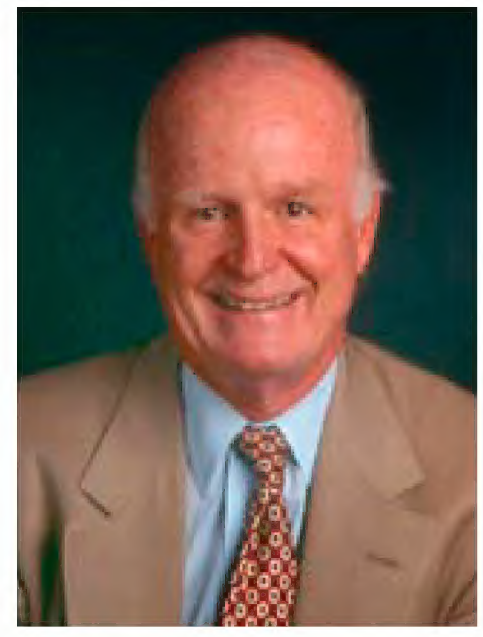
Transformation continues to reflect the Academy – whether you visit our interim home in downtown San Francisco, participate in educational programs, or experience firsthand scientific discoveries through lectures and tours with our scientists. And equally important – we are building an exciting new museum for the 21st century in Golden Gate Park. During this momentous time in our 152-year history we continue to pursue our mission to explore, explain, and protect the natural world. But we are pursuing our work in wholly new ways—connecting with our visitors and students and making science more accessible and relevant to people of all levels of experience.

Creating cutting-edge exhibits that employ real-time data from Academy research is one way we are transforming how we engage visitors and students in the natural world and sciences. Our first exhibit at Howard Street, *Ants: Hidden Worlds Revealed* featured six live colonies of ants, from fierce Army Ants to crowd-pleasing Leaf Cutter Ants from Costa Rica. Enhanced by video and audio content as well as daily live feedings of the Army Ants, this popular exhibit provided the public with a "behind the scenes" look at the Academy, our scientists' current research, and the husbandry involved in a live exhibit.

Just as the exhibits at Howard Street reflect greater integration of the Academy and its research and scientific collections, so too the Education Division is bringing together our assets to better serve students and citizen scientists alike. The Academy's education programs continue to serve wide and diverse audiences, through on and offsite outreach programs, symposia and workshops for educators, and more than 11,000 hours of facilitation and demonstrations on the public floor provided by our Careers in Science interns.

This is an exciting time for the Academy, as we prototype exhibits and programs and lay the groundwork for our new "green" home, opening in Golden Gate Park in 2008. We are creating history as we go, and you are part of it: none of the successes outlined in this report could have been accomplished without your support. On behalf of the Board of Trustees, Academy staff, docents, and volunteers, we thank you for your commitment to the Academy's past and present. Together we can look forward to the opportunities and discoveries the future is sure to bring.

Patrick Kociolek
Executive Director



W. Richard Bingham
Chair, Board of Trustees

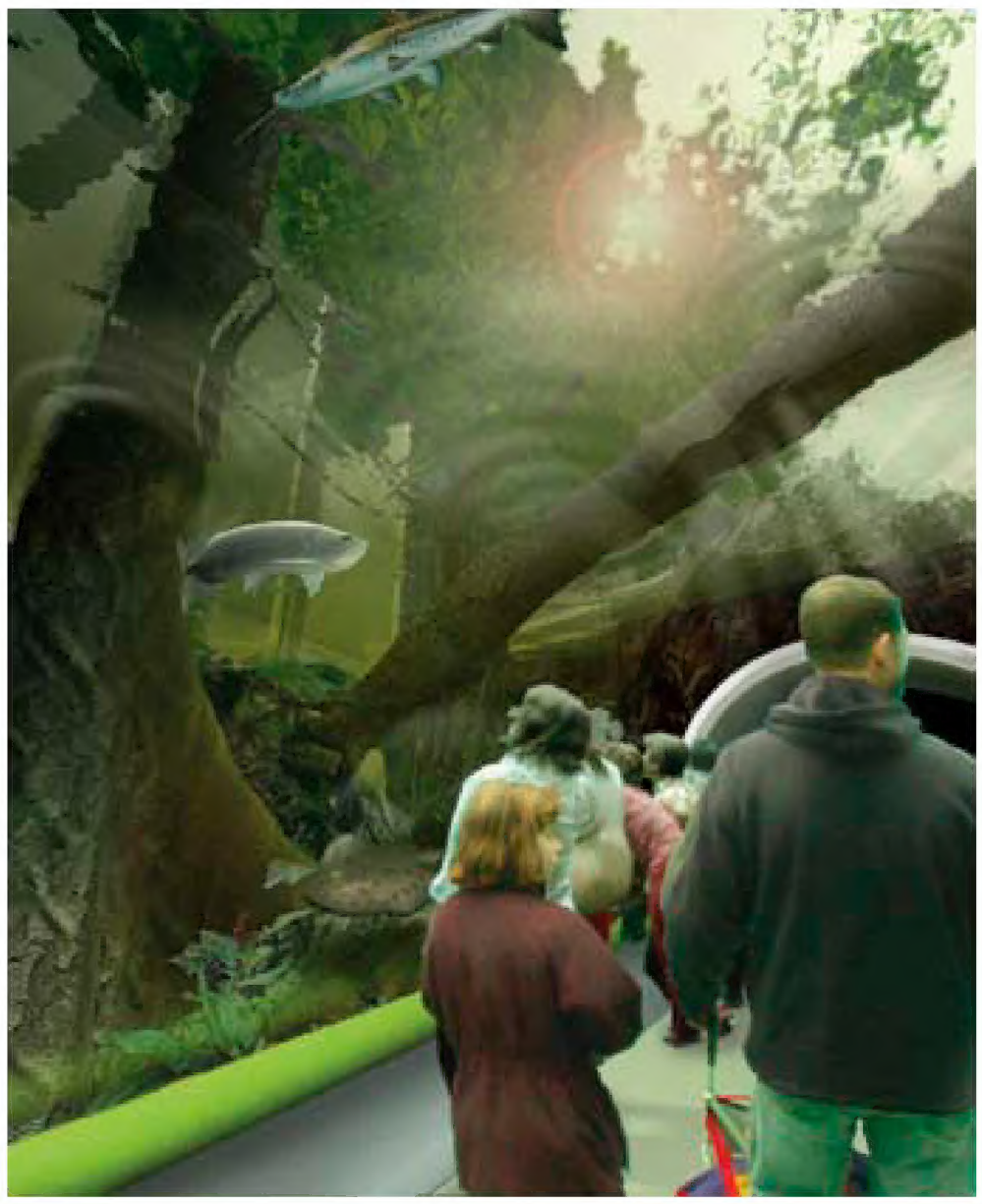
The New California Academy of Sciences: Building History from the Ground Up

Opening in 2008, the new California Academy of Sciences in Golden Gate Park will make history as the largest, most-visited environmentally sustainable building in the world.

Designed by Pritzker Prize-winning architect Renzo Piano, the new Academy will be one of 10 "green building" pilot projects of San Francisco's Department of the Environment. Composed of recycled steel and sustainably harvested wood, concrete, and glass, the new Academy will use 50% less energy than a building of comparable size and feature solar lighting, natural ventilation, and high-efficiency irrigation technology. Fifty-five thousand square feet of photo voltaic cells along the roof edge will supply 5% of the Academy's energy while preventing the release of more than 405,000 pounds of greenhouse gas emissions—the equivalent to planting over 340 trees.

The new Academy will be green literally as well as figuratively, returning one acre of green space to the Park and featuring a living roof of California native plants. Created in collaboration with Strybing Arboretum and echoing the seven hills of San Francisco, this publicly-accessible roof will be as practical as it is beautiful, reducing the runoff of salt, sand, soil, pesticides, and other pollutants into nearby ecosystems by nearly 50%.

Even the demolition of the old Academy was environmentally friendly: 100% of demolition waste was reused or recycled, including 9,000 tons of concrete, 12,000 tons of metal, and 120 tons of greenwaste.



The California Academy of Sciences was recently selected as the North American winner of the silver Holcim Award for Sustainable Construction, and once completed the new Academy is expected to receive a Platinum rating in Leadership in Energy and Environmental Design from the U.S. Green Building Council, the highest rating possible. From demolition to construction to completion, the new California Academy of Sciences will redefine how people can live and work in environmentally responsible ways, setting a new standard for green buildings in the 21st century.

Keep up with the construction of the new Academy via our webcam, accessible from the Academy website: www.calacademy.org.

EXPLORE

Research informs all Academy pursuits, from exhibits to educational programming, and each year our staff pursue projects all over the world, assessing biodiversity in threatened regions, advocating for the protection of endangered species, and training the next generation of scientists.

The Gaoligongshan Biodiversity Survey

In 2002, the Academy launched the Gaoligongshan Biodiversity Survey, a large-scale inventory of the Gaoligongshan region of the Yunnan Province of China. In partnership with the Chinese Academy of Sciences and Ministry of Forestry, Academy staff conduct research while generating extensive natural history collections, fostering training and intellectual exchange programs among participating institutions, and making detailed information available to the local population and government agencies to aid land-use decisions. The project will continue over the next three years with a $225,000 grant from the John D. and Catherine T. MacArthur Foundation.

Return to the Galápagos Islands

In spring 2005, led by Academy scientists Meg Burke, Tom Daniel, Terry Gosliner, and John McCosker, 33 Academy members and Trustees embarked on a two-week trip to commemorate the 100th anniversary of the Academy's first research trip to the Galápagos Islands. The original voyage lasted more than a year and produced specimens that helped rebuild Academy collections after the 1906 earthquake. Since this initial historic trip, Academy scientists have returned to the Galápagos Islands many times to collect specimens and help found the Charles Darwin Research Station at Academy Bay and the Galápagos National Park.

On this most recent trip, Academy travelers visited many of the collection sites from the first voyage and even received permission to visit usually off-limit areas, such as the island of Marchena. Our deep ties to these islands were strengthened in a reception at the presidential palace in Quito, Ecuador and the signing of a formal partnership between the Academy and the government of Ecuador to continue to explore the Galápagos, train young scientists, and develop educational programming for the public. As part of the partnership, over the next several years, Ecuadorian students and scientists will visit the Academy to work collaboratively with our research and education staff.

Training Tomorrow's Scientists

Each summer, the Academy Research Division offers internships in the Summer Systematics Institute (SSI). This past year, nine undergraduates from around the country participated in another successful SSI program aimed at training the next generation of phylogenetic systematists. Interns conducted individual research projects and the program culminated with presentations on sand dollar evolution, frogs from Myanmar and Sao Tomé, and techniques for illustrating turtles and corals.

EXPLAIN

Over the last year the Academy welcomed more than 257,000 visitors to our Howard Street location. Our temporary site is the perfect place to test exhibit and programming ideas for the new Academy, and 2004-2005 set a range of experiments into motion.

Steinhart Aquarium

A prototype of the much larger coral reef exhibit planned for the new Academy, our coral reef tank at Howard Street houses the reef inhabitants brought from Golden Gate Park and the growing collection for the new building. Growing the corals has required expertise and innovation on the part of Academy staff, including developing a special lighting system that mimics the high-intensity sunlight coral reefs require to thrive. Staff engineering of the closed life support system and the mixing system for synthetic saltwater have been successful resulting in exponential coral growth.

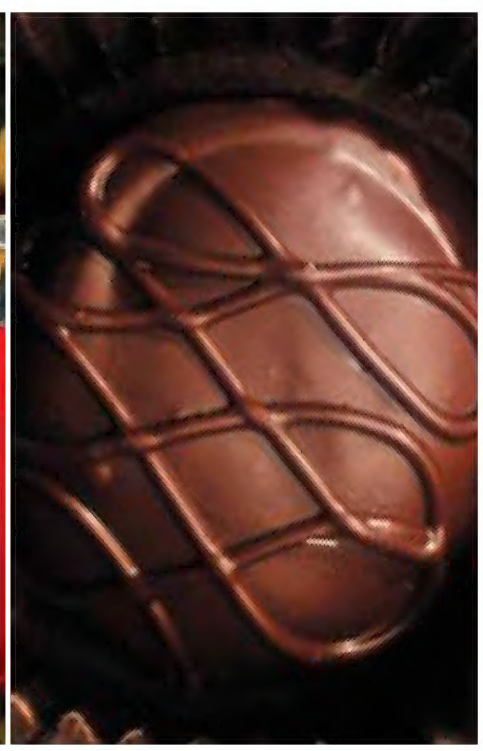
Corals are not the only ones thriving! Our fish population has grown since we moved downtown: we now have nearly 350 species (and 5,000 individuals) on exhibit and expect to grow to 400 species by the time we move back to the Park. Our African penguins are flourishing in their increased swim and play space: two of the three couples have already laid eggs. New penguin couples arriving from the New England Aquarium in late 2005 will hopefully form pair bonds and begin incubating eggs and rearing chicks for our new facility by early 2007.

Chocolate: The Exhibition

In June, we opened *Chocolate: The Exhibition*, on loan from The Field Museum in Chicago. Exploring the history, botany, and anthropology of chocolate and supplemented by educational (and edible) programming, the exhibit was the first of its kind at the Academy and drew scientists, schoolchildren, and chocolate lovers alike.

The Naturalist Center & Library

The Naturalist Center houses our library's general reference materials and lending collection, as well as our new natural history specimen reference collection, and provides both scheduled and drop-in activities by educators and librarians. Last year, the Center welcomed 181,456 visitors, including graduate students doing research, teachers and students taking advantage of the Center's collections and microscopes, and parents helping their children answer their questions about the natural world.



EXPLAIN

Our interlibrary loan program continued to serve a wide audience, receiving nearly 4,000 lending requests from 49 states and 20 foreign countries, and the Manzanita Project, our 22,000-image database of California flora, fauna, and landscapes created in conjunction with the UC Berkeley, averaged 20,722 queries per day.

The Nature Nest

The Nature Nest is a safe learning and play space for children under five, featuring eye-level terrariums with live animals, a water table, and Blue Elephant Storytime. Last year, the Nature Nest welcomed more than 41,000 small children and their caregivers.

Public Programs

Academy visitors enjoyed over 400 hours of public programs, including hands-on activities, music and dance performances, and live animal presentations. Our Traditional Arts Program also provided programming, including special events in conjunction with African-American, Asian-Pacific, Latino, and Native American Heritage Months.

Education Programs

The Academy's spectrum of educational programs fosters understanding and stewardship of the world around us while engaging the public with timely science that is relevant to our lives. Education offers hands-on experiences, training, and outreach both on and off the museum's public floor.

This past year, the museum floor remained the anchor point for programming, with Docents, Volunteers, and Careers In Science high school and college interns enriching hundreds of thousands of visitor experiences through tours, special explainer carts, and facilitation at the Discovery Tide Pool.

Our Teacher Services Program provided educators from throughout the Bay Area with forums on topical science, workshops, and lending kits to enhance classroom curriculum. California students have ranked among the lowest in the country on recent science tests, and Teacher Services is leading the Academy's effort to address this deficit.

Academy outreach, which includes our Earth-Ocean-Space, Wild City! and Field Studies programs, provided hands-on programming to children in communities traditionally underrepresented in the sciences, using specimens, live animals, and outdoor activities to engage and inspire participants.

The Lecture Program and Adult and Family Courses supported the Academy's dedication to life-long learning, serving adults, Elderhostel seniors, members, and families through classes, field trips, member lectures, and public lectures such as the renowned Conversations at the Herbst Theatre, the Benjamin Dean Lectures, and the Leakey Speaker Series on Human Origins.

PROTECT

Since its inception, the Academy has been a leader in the field of conservation, serving as the first home of the Sierra Club, advocating for the protection of endangered species in California, and supporting environmental protection efforts in Yosemite as early as 1863. Today, we take an integrated approach to conservation – from hands-on programs for citizen scientists to innovative exhibits that inform and inspire – all rooted in Academy research that spans the globe.

Madagascar Biodiversity Project

Ten years ago, in collaboration with the National Zoo in Madagascar, the Academy developed the Madagascar Biodiversity Project, a research and conservation strategy driven by the urgent need to map biodiversity in Madagascar. Today, led by Academy entomologist Brian Fisher, a team of Malagasy students and scientists conducts biological inventories in threatened habitats in Madagascar, then translates and applies the results to conservation. Collecting baseline data is the first step toward making informed decisions about conservation, and training Malagasy scientists to become participants in policy-formation in their country is critical to ensuring long-term commitment to the preservation of this unique island.

Ants: Hidden Worlds Revealed

Based on Dr. Fisher's work in Madagascar, *Ants: Hidden Worlds Revealed* was the Academy's first exhibit to debut at Howard Street, showcasing six colonies of live ants. The exhibit covered ant basics (what an ant is and how its life cycle functions), while exploring more complicated topics such as the negative impacts of invasive ant species, worldwide efforts to conserve ants, and why conservation is important. Ants engaged visitors through live animals, video clips, and feedings combined with short presentations by Academy biologists—impressing upon visitors the great impact these small creatures have on entire ecosystems.

Bay Area Ant Survey (BAAS)

A collaborative project between Academy scientists, educators, local school groups, and museum visitors, the BAAS uses specimens and data gathered by the public to build a geographically-referenced inventory of Bay Area ant species and promote conservation. Participants are given an orientation to BAAS and their own ant collecting kit and can utilize identification keys and GIS reference maps in the Academy's Naturalist Center.

Since July 2004, more than 400 participants have collected more than 6,500 ants and discovered 14 new county records in the Bay Area, proving that people of all ages and experience can help explore, explain, and protect the natural world.

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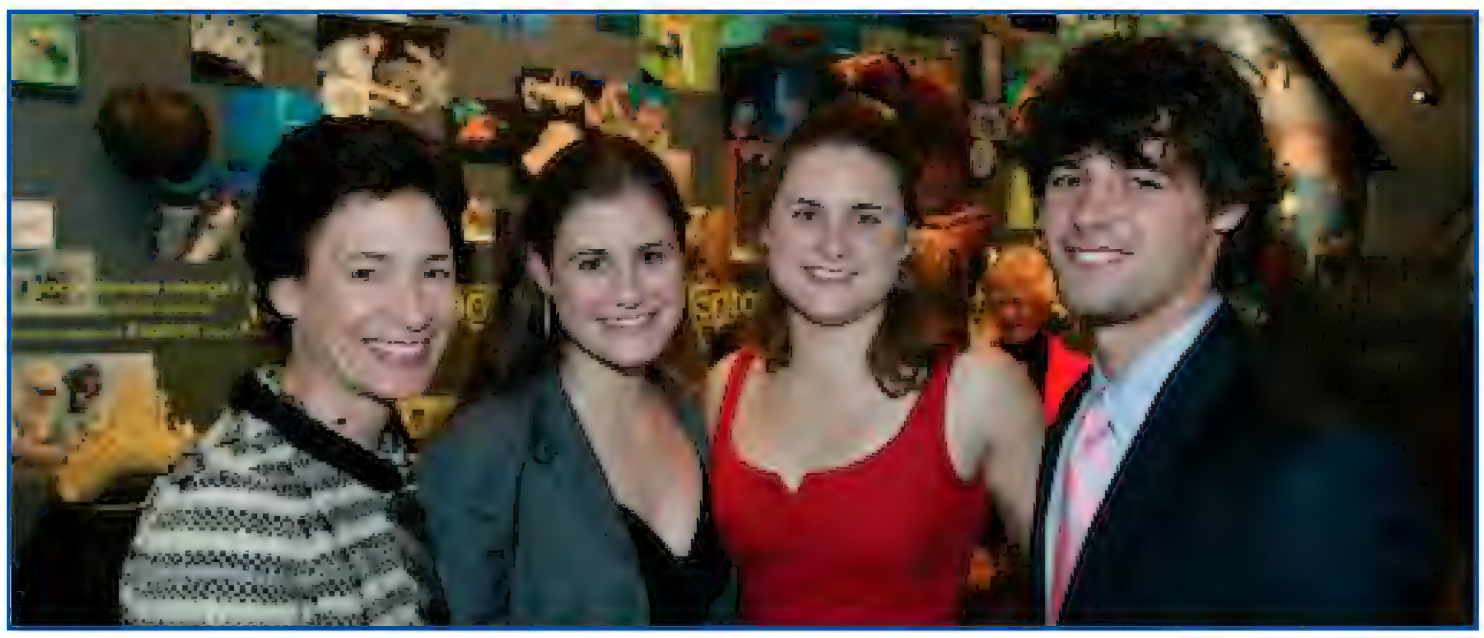

Trustee Janet McKinley, family, and friends attended the opening reception for the exhibition *Chocolate*.

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Aaron M. Bauer, Herpetology
Robert G. Bergman, Chemistry
Vladimir A. Beshkov, Herpetology
James L. Bischoff, Marine Geology

Fellows and Honorary Fellows 2004-2005

R.M. Bohart, Entomology
Michael Boudart, Chemistry
Margaret Bradbury, Ichthyology
Hugh Bradner, Physics
John I. Brauman, Chemistry
Thomas S. Briggs, Entomology
Stephen H. Bullock, Plant Ecology
Sherwin Carlquist, Botany
James M. Carpenter, Entomology
Alan Channing, Herpetology
Joan R. Clark, Mineralogy
William P. Cochlan, Biological Oceanography
Howard L. Cogswell, Vertebrate Ecology
Anne C. Cohen, Invertebrate Systematics
Daniel M. Cohen, Ichthyology
James P. Collman, Chemistry
Linda Cordell, Anthropology
Richard L. Doutt, Entomology
William Doyle, Botany
David M. Eakin, Physics
Ann Howland Ehrlich, Conservation Biology
William R. Evitt, Paleontology
Carl J. Ferraris, Jr., Ichthyology
David M. Golden, Chemistry
George Gorman, Evolutionary Biology
Harry W. Greene, Herpetology
Joseph T. Gregory, Paleontology
Joseph G. Hall, Mammalogy
David Halpern, Physical Oceanography
Cadet Hand, Invertebrate Zoology
Alexander Harcourt, Primatology
Susan P. Harrison, Conservation Biology
Colin O. Hermans, Invertebrate Zoology
Kim M. Howell, Herpetology
Michael E. Irwin, Entomology
Wim Kimmerer, Estuarine Ecology
Richard E. Leakey, Anthropology
James P. Mackey, Herpetology
C. Don MacNeill, Entomology
Donald B. McIntyre, Geology
Richard E. Packard, Physics
Lynne R. Parenti, Ichthyology
John Stuart Pearse, Invertebrate Zoology
Edwin Philip Pister, Conservation Biology
Karl S. Pister, Civil Engineering and Education
Galen B. Rathbun, Mammalogy
David Rentz, Entomology
George K. Roderick,
Population Genetics and Evolutionary Biology
Peter Rodman, Anthropology
José Sarukhán, Botany
Jacqueline Schonewald, Mammalogy
Harvey I. Scudder, Entomology
Howard S. Shellhammer, Mammalogy
Norman J. Silberling, Geology
Paul C. Silva, Botany
Edward Laidlaw Smith, Entomology
Michael E. Soulé, Evolutionary and Conservation Biology
Ignacio Tinoco, Chemistry
Maoli Tu, Herpetology
Tjeerd H. van Andel, Geology
Blair Van Valkenburgh, Vertebrate Paleontology
Robert E. Wallace, Geology
Robert K. Wayne, Molecular Systematics
Harold F. Weaver, Astronomy
Cherie Wetzel, Botany
Frances Wilkerson, Biological Oceanography
Mark Wilkinson, Herpetology,
Systematics and Systematic Theory
Arthur P. Wolf, Anthropology
Jack A. Wolfe, Geology
Richard N. Zare, Chemistry
Ermi Zhao, Herpetology

Medalist Bio

Dr. William N. Eschmeyer
California Academy of Sciences
875 Howard Street
San Francisco, CA 94103

Fellow and Curator Emeritus of Ichthyology William Eschmeyer and daughter Lisa Eschmeyer after Bill Eschmeyer received the Fellows Medal.

Dr. Eschmeyer, Senior Curator in the Academy's Ichthyology Department and an Academy Fellow, has had a long association with the institution, joining the staff in 1967. He currently holds the Follett Chair of Ichthyology at the Academy and was the first person to do so. During his long and distinguished career, he served as Director of the Research Division and stepped in to direct the Public Programs Division in the 90s. Externally, Dr. Eschmeyer has served on the Board of Governors of the American Society of Ichthyologists and Herpetologists and has been an active member of the International Commission on Zoological Nomenclature for many years. His research on rock fishes (family Scorpaenidae) has produced numerous technical papers, as well as his popular Field Guide to Pacific Coast Fishes in the Roger Tory Peterson natural history series. However, the most compelling rationale for awarding the Fellows Medal to Dr. Eschmeyer is his outstanding and unique contribution to ichthyology and systematics, his Catalog of Fishes, a three volume set first published in hard copy inn 1998 and continuously updated and available on the web since then. The Catalog is the most heavily cited and indispensable reference for the names of genera and species of fishes, and is indisputably the single most important contribution to ichthyology in at least the last century.

ANNUAL REPORT FY 2004-2005 PUBLICATIONS

EDUCATION DIVISION

Scientific Publications:

Tang, C.M. 2004. Guess who's coming to dinner?: Diversity in predators, prey and predation metrics. Geological Society of America Abstracts with Programs 36(5):479.

Abstracts, Reviews and Popular Publications:

Tang, C.M. 2005. Detecting stability and change in fossil communities: the need for temporal- and scale-dependent perspectives. Abstracts from the joint meeting of the American Malacological Society and Western Society of Malacologists, Monterey, CA.

RESEARCH DIVISION

ANTHROPOLOGY

Scientific Publications:

Jablonski, N.G. 2005. Primate homeland: Forests and the evolution of primates during the Tertiary and Quaternary in Asia. Anthropological Sciences (Japan) 113:117-122.

_____. 2005. Primate diversity and environmental seasonality in historical perspective, Pp. 465-488 in Primate Seasonality. D. Brockman and C. van Schaik, eds. Cambridge University Press, Cambridge.

Jablonski, N.G. and M.G. Ghiselin, eds. 2005. Biodiversity and Taxonomy. Proceedings of the California Academy of Sciences. 56(suppl I), 236 pp.

Ji, X.-P., N.G. Jablonski, G. Chaplin, J.-W. Liu, W. Dong, Z.-C. Li and L.-R. Wang. 2004. Preliminary report of mammal fossils recovered from the 2003 field seasons from Tangizgou, Yunnan. Pp. 243-252 in Proceedings of the Ninth Annual Symposium of the Chinese Society of Vertebrate Paleontology. W. Dong, ed., China Ocean Press, Beijing.

McBrearty, S. and N.G. Jablonski. 2005. First fossil chimpanzee. Nature 437:105-108.

AQUATIC BIOLOGY

Scientific Publications:

Abadia, R., B. Day, N. Baron, N. Knowlton, J.E. McCosker, A. Katoppo and H. Hough. 2004. Chapter 10. Defying Ocean's End through the power of communications. Pp. 183-196 in Defying Ocean's End. L.K. Glover and S.A. Earle, eds. Island Press, Washington.

McCosker, J.E. 2004. Monterey aces the great white shark ethics test. Opinion-Editorial, Los Angeles Times, 31 October 2004, p. M5.

McCosker, J.E., S. Anderson, J. Richards and M. Love. 2004. First record of the Cape cigarfish, Cubiceps capensis (family Nomeidae), from California waters. California Fish and Game 90(3):157-159.

McCosker, J.E. and J.E. Randall. 2005. Notes on the snake eels of the genera Apterichtus and Ichthyapus (Anguilliformes: Ophichthidae) of the Central and South Pacific, with the description of a new species. Zootaxa 800:1-11.

Schaller, P. and Dunker, F. 2005. Contrast radiograph to determine trauma to the valvular intestine in the blacktip reef shark (Carcharhinus melanopterus). Drum and Croaker 36:23-28. [

Schaller, P. 2004. Observation of whitetip reef shark (Triaenodon obesus) parturition in captivity. Reprinted in: The Shark Supplement, Drum and Croaker Special Edition Number 2:92-96.

BOTANY

Scientific Publications:

Almeda, F., G.A. Rodríguez and M.A. Garita. 2004. Una Nueva Especie de Monochaetum (Melastomataceae) del Parque Internacional La Amistad, Costa Rica. Novon 14:245-248.

Almeda, F. 2005. Melastomataceae – The Melastome Family. Pp. 394-397 in A Tropical Garden Flora – Plants Cultivated in the Hawaiian Islands and other Tropical Places. G.W. Staples and D.R. Herbst, eds. Bishop Museum Press, Honolulu.

Carnevali F., G., J.L. Tapia, I.M. Ramírez M., R. Duno de Stefano, S. Hernández, T.F. Daniel, F. Coe, J. Javier J.O., N. Diego, L. Can I. and F. May P. 2005. Notes on the flora of the Yucatán Peninsula III: New records and miscellaneous notes for the peninsular flora II. Harvard Papers in Botany 9:257-296.

Daniel, T.F. 2005. Catalog of Honduran Acanthaceae with taxonomic and phytogeographic notes. Contributions from the University of Michigan Herbarium 24:51-108.

_____. 2005. Further range extensions of Mexican Acanthaceae. Polibotánica 18:1-12.

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Daniel, T.F., E. Makings and M. Chamberland. 2005. Additions to the Acanthaceae of Arizona. Proceedings of the California Academy of Sciences 56:88-90.

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Fritsch, P.W., F. Almeda, S.S. Renner, A.B. Martins and B.C. Cruz. 2004. Phylogeny and circumscription of the near-endemic Brazilian tribe Microliceae (Melastomataceae). American Journal of Botany 91:1105-1114.

Holmqvist, J.P., M. Manktelow and T.F. Daniel. 2005. Wing pollination by bees in Mexacanthus (Acanthaceae)? Acta Botanica Mexicana 71:11-17.

Johnson, S.D., K.E. Steiner and R. Kaiser. 2005. Deceptive pollination in two ecotypes of Disa spathulata (Orchidaceae) differing in morphology and floral fragrance. Plant Systematics and Evolution 255:87-98.

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Wolfe, A D., C.P. Randle, L. Liu and K.E. Steiner. 2005. Phylogeny and biogeography of Orobanchaceae. Folia Geobotanica 40:115-134.

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McDade, L.A., C.A. Keil and T.F. Daniel. 2005. Molecular phylogenies reveal multiple origins for distinctive pollen types in Acanthaceae. Botany 2005,Abstracts, p. 121-122.

CENTER OF BIODIVERSITY RESEARCH AND INFORMATION

Scientific Publications:

Sasaki,T., M. Nikaido, H. Hamilton, M. Goto, H. Kato, N. Kanda, L.A. Pastene,Y. Cao, M. Hasegawa, R.E. Fordyce and N. Okada. 2005. Mitochondrial phylogenetics and evolution of mysticete whales. Systematic Biology 54(1):77-90.

Teske, P.R., H. Hamilton, P.J. Palsbøll, C.K. Choo, H. Gabr, S.A. Lourie, M. Santos, A. Sreepada, M.I. Cherry and C.A. Matthee. 2005. Molecular evidence suggests that long-distance colonization, low inter-population connectivity, and population expansions are driving speciation in an Indo-Pacific seahorse lineage. Marine Ecology Progress Series, 286:249-260.

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Hamilton, H. and S. Caballero. 2005.The Platanista conundrum: Rremarkably low mitochondrial diversity in geologically disjunct Indian river dolphin populations. Abstracts of the 16th Biennial Meeting of the Society for Marine Mammalogy, San Diego, CA.

CENTER FOR THE STUDY OF THE HISTORY AND PHILOSOPHY OF SCIENCE

Scientific Publications:

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_____. 2005.The Darwinian Revolution as viewed by a philosophical biologist. Journal of the History of Biology 38:123-136.

_____. 2005. Lorenz Oken. Pp. 433-457 in Naturphilosophie nach Schelling,T. Bach and O. Breidbach, eds. Frommann Holzboog, Stuttgart.

Ghiselin, M.T. and N.G. Jablonski. 2005.The Future of Taxonomy. Proceedings of the California Academy of Sciences 56(suppl. 1).

Ghiselin, M.T. 2004. Ernst Haeckel and the genealogy of scientific travel mystique. Proceedings of the California Academy of Sciences 55(suppl. 2):42-56.

Ghiselin, M.T. and A.E. Leviton, eds. 2004. Impact of Travels on Scientific Knowledge. Proceedings of the California Academy of Sciences 55(suppl. 2).

ENTOMOLOGY

Scientific Publications:

Simon F., G.V.N. Powell, K. S. Richardson, G. Manion, J. M. Overton,T. F.Allnutt, S. E. Cameron, K. Mantle, N. D. Burgess, D. P. Faith, J. F. Lamoreux, G. Kier, R. J. Hijmans,V.A. Funk, G.A. Cassis, B.L. Fisher, P. Flemons, D. Lees, J.C. Lovett and R.S.A.R. Van Rompaey. 2004. Mapping More of Terrestrial Biodiversity for Global Conservation Assessment. BioScience 54:1101-1109.

Daane, K.M., K.R.Sime, D.L. Dahlsten, J.W.Andrews Jr. and R.L. Zuparko. 2005.The biology of Psyllaephagus bliteus Riek (Hymenoptera: Encyrtidae), a parasitoid of the red gum lerp psyllid (Hemiptera: Psylloidea). Biological Control 32:228-235.

Fisher, B.L. 2005.A Model for a Global Inventory of Ants:A Case Study in Madagascar. Pp 78-89 in Biodiversity:A Symposium Held on the Occasion of the 150th Anniversary of the California Academy of Sciences June 17-18, 2003. N.G. Jablonski, ed. Proceedings of the California Academy of Sciences ser. 4, 56(suppl. I).

Hurley, R.L., J.B. Runyon and P.H.Arnaud, Jr. 2004. Fred Carl Harmston (1911-1995). MYIA 7(1):1-39, figs. 1-29.

Kavanaugh, D.H. 2004. Planning for research in the 21st century at a large natural history museum. Pp. 295-306 in Institutions of natural history: past, present and future. Proceedings of a symposium held June 16-17, 2003.A.E. Leviton, ed. Proceedings of the California Academy of Sciences, 55 (suppl. I).

Liang, H.-B., D.H. Kavanaugh and M.-Y.Tian. 2004. Notes on Drypta longicollis MacLeay and the status of the genus-group name, Desera Dejean, 1825 (Coleoptera: Carabidae: Dryptini). Proceedings of the California Academy of Sciences 55:377-383.

Marek, P.E. and D.H. Kavanaugh. 2005.The evolutionary relationships of North American Diplous Motschulsky (Coleoptera: Carabidae: Patrobini) inferred from morphological and molecular evidence. Invertebrate Systematics 19:145-168.

Penny, N.D. 2005.The California Academy of Sciences Gulf of Guinea Expedition (2001). IV.The Neuroptera of São Tomé and Príncipe Islands. Proceedings of the California Academy of Sciences 56(22):285-293.

Platnick, N.I. and D. Ubick. 2005.A revision of the North American spider genus Anachemmis Chamberlin (Araneae,Tengellidae).American Museum Novitates 3477:1-20.

Prentice, M.A. and W.J. Pulawski. 2004.Pseudoscolia aequatoria new species, the first sub-Saharan member of the genus (Hymenoptera: Apoidea: Crabronidae). Journal of the Kansas Entomological Society 77:377-382.

Saux, C., B.L. Fisher and G.S. Spicer. 2004. Dracula ant phylogeny as inferred by nuclear 28S rDNA sequences and implications for ant systematics (Hymenoptera: Formicidae: Amblyoponinae). Molecular Phylogenetics and Evolution 33:457-468.

Silva, D. 2004. Revision of the spider genus Caloctenus Keyserling, 1877 (Araneae, Ctenidae). Revista peruana de Entomologia 11(1):5-26.

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_____. 2005. Revision of the spider genus Chrosioderma Simon (Araneae: Sparassidae). Proceedings of the California Academy of Sciences 56(25):337-377.

Simon F., G.V.N. Powell, K.S. Richardson, G. Manion, J.M. Overton, T.F. Allnutt, S.E. Cameron, K. Mantle, N.D. Burgess, D.P. Faith, J.F. Lamoreux, G. Kier, R.J. Hijmans, V.A. Funk, G.A.
Griswold, C.E. and J. Ledford. 2004. A revision of the spider genus Calileptoneta Platnick (Araneae, Leptonetidae), with notes on morphology, natural history and biogeography. The Journal of Arachnology 32:231-269.

Trjapitzin, V.A. and R.L. Zuparko. 2004. A synopsis of the genus Cheiloneurus Westwood, 1833 (Hymenoptera: Chalcidoidea: Encyrtidae) of the New World. Russian Entomol. J. 13(4):257-266.

Ubick, D. and T.S. Briggs. 2004. The harvestman family Phalangodidae. 5. New records and species of Texella Goodnight & Goodnight (Opiliones: Laniatores). Texas Memorial Museum, Speleological Monographs 6:101-141.

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HERPETOLOGY

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Gonzalez, M., Kyi Soe Lwin and J.V. Vindum. 2005. New records for Scincella victoriana (Shreve, 1940) from the Chin Hills, Myanmar. Proceedings of the California Academy of Sciences 56:391-392.

Hillman, S.S., P.C. Withers, M.S. Hedrick and R. C. Drewes. 2005. Functional roles for the compartmentalization of the subcutaneous lymph sacs of anuran amphibians. Physiological and Biochemical Zoology 78:515-523.

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_____ and _____. 2004. The impact of travels on scientific knowledge: William Thomas Blanford, Henry Francis Blanford, and the Geological Survey of India, 1851-1889. Pp. 117-137 in Impact of Travels on Scientific Knowledge. M. Ghiselin and A. Leviton, eds. Proceedings of the California Academy of Sciences, ser. 4, 55(Suppl. II)(9).

and , eds. 2004. _____ and _____, eds. 2004. Museums and Other Institutions of Natural History: Past, Present, and Future. Proceedings of the California Academy of Sciences, ser. 4, 55(Suppl.), 329 pp.

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Wilkinson, J.A., Thin Thin, Kyi Soe Lwin and Awan Khwi Shein. 2005. A new species of Rhacophorus (Anura: Rhacophoridae) from Myanmar. Proceedings of the California Academy of Sciences 56:42-52.

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Abstracts, Reviews and Popular Publications:

Aldrich, M.L. and A.E. Leviton. 2005. Winifred Goldring (1888-1971), New York Paleontologist. Geological Society of America, Northeastern Division, Program with Abstracts. Abstr. 14.7.

Drewes, R.C., S.S. Hillman, M.S. Hedrick, L.G. Wilson, H.B. Constable and P.C. Withers. 2005. The anuran lymphatic system: How frogs "get it up". 5th World Congress in Herpetology. Programme and Abstracts, addendum p. 1. University of Stellenbosch, South Africa.

Electronic Publications:

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ICHTHYOLOGY

Scientific Publications:

Greenfield, D.W. 2005. Brotula flaviviridis, a new species of

brotula from Fiji (Teleostei: Ophidiidae: Brotulinae). Proceeding California Academy of Sciences 56(8):80-85.

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INVERTEBRATE ZOOLOGY AND GEOLOGY

Scientific Publications:

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ORNITHOLOGY AND MAMMOLOGY

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OSCHER MOLECULAR LABORATORY

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Nadia Strasser
Carol Straus
G.Todd Stress
Mila Stroganoff
Angel Stucker
Amelia Sugarman
Brian Sulley
Charlie Sun
Ayako Suzuki
Marilyn Noda Swartz
Isidore Szczepaniak
Evangeline Tai
Renee Tai
Margaret Tam
Josephine Tan
Sabrina Tan
Joyce Tang
Randy Taylor
Ruth Taylor
Carlos Tenolio
Fumey Tete
Jenny Thai
Loan K Thai
Camilla Thomas
Kristen Thomas
Marilyn Thompson
Fong-Yi Ting
David Toren
George Torgun
Nicole Torres
Sharon Toy-Choutka
Susan Tran
Andrew Trump
Leilon Tsue
Calvin Tsui
Makoto Tsunozaki
Jennifer Tucker
Jonathan Tupy
Virginia Tusher
Mackenzie Tysell
Carol-Ann Uetake-Shapiro
William Urbani
Veronica Uy
Luke Vairo
Pam Van der Leeden
Robert Venegas
Patricia Venturino
Joan Verdi
Adrienne Villalon
Eleanor Visser
Lisa Vittori
Nataliya Volsrava
Susann Volzer
Raf Vranizon
Frank Vuong
Sadie Waddington
Anne Kristine Wagener
Gentle Wagner
Johnny Walker
Thomas Walker III
Kim Wallace
Sara Marie Wallace
Heather Walling
Janet Walsh
Lesley-Marie Walsh
Jennifer Walton
Kim Walton
Sindy Wan
Hui-Hui Wang
Jennifer Wang
Tamara Warren
Andrew Washburn
Delcey Watkins
Benson Way
Barbara Webber
James Webster
Xuan (Ray) Wei
Brooke Weinstein
Carol Deane Weiske
Andrea Wells
Mark Welte
Janet Wessel
Barbara West
Ann Weybright
Walter Weybright
George Wilhelmsen
Eva Williams
Kimberly Williams
Paul Williams
Seaberry Williams
Marcella Williamson
Wilfred Willis
Dan Wilson
Douglas Wilson
Thais Winsome
Jonathan Wolf
Angela Won
Anjennette Wong
Diane Wong
Judy Wong
Kimberly Wong
Melinda Wong
Kristen Wood
Jonathan Xiong
Melody Yeager
Brenda Yesko
Ephu Yip
Earl Yorkey
Yukiko Yoshida
Anthony Yuen
Helen Yune-Trowbridge
Flora Zagorites
Berta Zamora
Dong Zhao
Cay Zilka
Maxine Zylberberg

Balance Sheet

June 30, 2005 with comparative totals for 2004

Assets	Operating	Plant	Endowment	2005	2004
Cash & Equivalents	$257,736	$6,735,787		$6,993,523	$1,189,956
Investments in Marketable Securities	2,230,599	182,306,459	134,336,986	318,874,044	214,091,047
Receivables:					
Research Grants	335,606			335,606	160,290
Other Grants	30,323	270,050		300,373	1,700,911
Interest & Dividends		9,833	1,278,668	1,288,501	405,844
Other	238,788	238,146	379,114	856,048	893,346
Contributions	39,845	26,009,564		26,049,409	14,557,067
Due (to) from other funds	(395,238)	(386,725)	781,963	0	
Inventory	290,135			290,135	237,367
Prepaid Expenses	981,049	124,189		1,105,238	1,045,024
Investments Held in Trust			5,085,235	5,085,235	4,461,810
Restricted Cash		350,000		350,000	350,000
Deferred Bond Financing Costs, Net		8,144,909		8,144,909	3,390,471
Property & Equipment at cost, less Accumulated Depreciation		89,355,203		89,355,203	75,650,763
Total Assets	**$4,008,843**	**$313,157,415**	**$141,861,966**	**$459,028,224**	**$318,133,896**

Liabilities & Net Assets

Accounts Payable	$219,205	$82,853		$302,058	$1,371,122
Accrued Expenses & Other Liabilities	1,244,386	2,192,941	824,858	4,262,185	2,207,289
Deferred Income	174,429			174,429	185,397
Annuities Payable			1,038,759	1,038,759	1,338,759
Series 2003-A Bonds		180,000,000		180,000,000	65,000,000
Other Long Term Liability		202,351		202,351	226,154
Total Liabilities	1,638,020	182,478,145	1,863,617	185,979,782	70,328,721
Unrestricted Net Assets					
Available for Operations	269,456	55,117,948	8,000,000	63,387,404	47,334,998
Invested in Property & Equipment		35,995,212		35,995,212	42,108,197
Designated for Endowment			88,307,470	88,307,470	85,359,222
Total Unrestricted	269,456	91,113,160	96,307,470	187,690,086	174,802,417
Temporarily Restricted Net Assets	2,101,367	39,566,110	11,074,438	52,741,915	41,102,514
Permanently Restricted Net Assets			32,616,441	32,616,441	31,900,244
Total Net Assets	**2,370,823**	**130,679,270**	**139,998,349**	**273,048,442**	**247,805,175**
Total Liabilities & Net Assets	**$4,008,843**	**$313,157,415**	**$141,861,966**	**$459,028,224**	**$318,133,896**

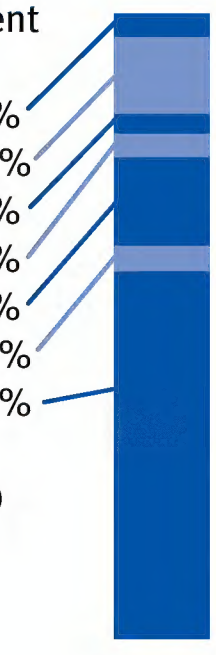
Statement of Activities

Years Ended June 30, 2003 and 2002

Changes in Net Assets	Operating	Plant	Endowment	2005	2004
Revenue & Gains					
Admissions	724,287			724,287	1,376,095
Contributions	3,390,186	26,074,417	844,101	30,308,704	28,445,622
Memberships	590,848			590,848	576,825
Tuition & Program Fees	755,309			755,309	756,421
Auxiliary Activities	764,663	10,250		774,913	823,263
Government Grant Income	1,706,154			1,706,154	2,538,757
City & County of San Francisco	1,793,529	3,457,887		5,251,416	2,005,197
Investment Income	272,942	2,067,958	4,001,795	6,342,695	4,093,119
Net Realized and Unrealized Gains on Long-Term Investments	(363)	(25,530)	10,621,888	10,595,995	13,826,700
Net Insurance Proceeds		395,249		395,249	352,452
Total Revenue & Gains	**9,997,555**	**31,980,231**	**15,467,784**	**57,445,570**	**54,794,451**
Expenses					
Research	7,656,418	2,375,725		10,032,143	8,163,334
Public Programs	3,609,869	760,572		4,370,441	6,331,180
Aquarium	3,005,528	393,143		3,398,671	3,865,377
Development & Membership	2,371,965	1,075,838		3,447,803	3,644,858
Auxiliary Activities	815,844	45,320		861,164	1,269,652
Management & General	2,593,344	284,163		2,877,507	2,769,652
New Academy & Transition		7,214,574		7,214,574	4,340,816
Total Expense	**20,052,968**	**12,149,335**	**0**	**32,202,303**	**30,384,869**
Transfers Between Funds					
Capital Expenditures	(475,131)	475,131		0	
Other Transfers	10,316,841	(292,605)	(10,024,236)	0	
Increase/(Decrease) in Net Assets	**(213,703)**	**20,013,422**	**5,443,548**	**25,243,267**	**24,409,582**
Net Assets Beginning of Year	**2,584,526**	**110,665,848**	**134,554,801**	**247,805,175**	**223,395,593**
Net Assets End of Year	**$2,370,823**	**$130,679,270**	**$139,998,349**	**$273,048,442**	**$247,805,175**

Operating Revenue & Transfer: $20.3 million

	$ Millions	Percent
Admissions	$0.7	3.6%
Contributions	3.4	16.7%
Memberships	0.6	2.9%
Tuition & Program Fees	0.8	3.7%
Auxiliary Activities	0.8	3.8%
Government	3.5	17.2%
Investment & Endowment Transfer	10.6	52.1%
	$20.3	1.0



Operating Expenses: $20.0

	$ Millions	Percent
Management & General	$2.6	12.9%
Auxiliary Activities	0.8	4.1%
Development & Membership	2.4	11.8%
Aquarium	3.0	15.0%
Public Programs	3.6	18.0%
Research	7.7	38.2%
	$20.1	1.0